GENERAL NOTES AND SPECIFICATIONS

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND NATIONAL CODES ALONG WITH ALL VA STANDARDS. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

2. THE MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS REQUIRED FOR HIS WORK.

3. ALL MATERIALS, EQUIPMENT AND PRODUCTS INCORPORATED IN THE WORK UNDER THE CONTRACT SHALL BE NEW, OF A SUITABLE GRADE FOR THE PURPOSES INTENDED, AND TO THE EXTENT POSSIBLE, STANDARD PRODUCTS OF THE VARIOUS MANUFACTURERS EXCEPT WHERE SPECIAL CONSTRUCTION OR PERFORMANCE FEATURES ARE CALLED FOR.

4. ANY EQUIPMENT OR MATERIAL DEVIATIONS FROM THAT SPECIFIED OR DETAILED ON THIS DRAWING SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER. ALL PROPOSED EQUIPMENT DEVIATIONS SUBMITTED SHALL BE SIMILAR BOTH IN QUALITY AND CAPACITY TO THAT EQUIPMENT SPECIFIED.

5. ALL MECHANICAL EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITERS LABORATORIES (U.L.).

6. THE MECHANICAL CONTRACTOR SHALL INSTALL EQUIPMENT AS SHOWN ON THE DRAWINGS ALLOWING FOR SUFFICIENT ACCESS AND CLEARANCE SPACE FOR EQUIPMENT MAINTENANCE, REPAIRS AND REPLACEMENT. PROVIDE PROPER CLEARANCES FOR REQUIRED PIPING AND ELECTRICAL SERVICES AND CONNECTIONS. INSTALL ALL EQUIPMENTWITH REQUIRED ACCESS AND CLEARANCES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS AND/OR WITH ALL APPLICABLE CODES AND STANDARDS.

7. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION AND ROUTING OF ALL PROPOSED DUCTWORK, PIPING AND EQUIPMENT WITHIN THE BUILDING STRUCTURE.

8. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT EQUIPMENT. LOCATIONS SHALL BE COORDINATED WITH ALL CONTRACTORS PRIOR TO INSTALLATION.

9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER THIS CONTRACT.

10. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING FOR HIS EQUIPMENT.

11. DUCTWORK AND PIPING LAYOUTS AND LOCATIONS ARE SCHEMATIC. DO NOT SCALE THESE DRAWINGS. EXACT ROUTING OF DUCTWORK AND PIPING MUST BE DETERMINED IN THE FIELD. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR BY ACTUAL MEASUREMENT AND OBSERVATION BEFORE ORDERING OR FABRICATING ANY DUCTWORK, PIPING OR EQUIPMENT. ANY DISCREPANCIES BETWEEN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS OR DIMENSIONS SHALL BE REPORTED TO THE A/E AND VMAC COTR BEFORE THE PERFORMANCE OF ANY WORK. FAILURE TO VERIFY AND REPORT SHALL CONSTITUTE THE CONTRACTOR'S ACCEPTANCE OF THE EXISTING CONDITIONS AS FIT FOR THE PROPER EXECUTION OF HIS WORK. SEE ARCHITECTURAL DRAWINGS FOR FINAL LOCATION OF CEILING INSTALLED.

12. DUCTWORK AND PIPING SHALL BE KEPT AS CLOSE AND HIGH AS POSSIBLE TO THE BUILDING WALLS, CEILING AND FLOOR AND ROOF STRUCTURE IN ORDER THAT THE MAXIMUM AMOUNT OF SPACE IS AVAILABLE. ADDITIONAL OFFSETS, FITTINGS, ETC. NOT SHOWN BUT REQUIRED TO MAINTAIN MAXIMUM CLEARANCE SHALL BE PROVIDED AT NO ADDITIONAL COST,

13. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING, PAINTING AND CLEANING ASSOCIATED WITH THIS PROJECT UNLESS NOTED OTHERWISE.

14. PROVIDE A COMPLETE 1-YEAR WARRANTY ON ALL LABOR AND MATERIALS.

15. CONTRACTOR SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF PROJECT.

16. INSTALL ESCUTCHEONS IN ALL PLACES WHERE PIPING PENETRATES A WALL IN AN EXPOSED LOCATION.

17. THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, INCLUDING THE SCHEDULES AND DETAILS PRIOR TO INSTALLATION OF ANY MECHANICAL SYSTEMS AND SHALL RESOLVE ANY CONFLICTS WITH THE ENGINEER.

18. CONTRACTOR SHALL TAKE POSSESSION OF AND DISPOSE OF ALL EXISTING MATERIALS AND EQUIPMENT BEING DEMOLISHED AND/OR REMOVED. ALL ITEMS SHALL BE DISPOSED OF IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS THAT APPLY. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE DISPOSAL.

19. INSTALL SHUTOFF-DUTY VALVES AT EACH BRANCH CONNECTION TO SUPPLY MAINS, AND AT SUPPLY CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL CHECK VALVES AT EACH PUMP DISCHARGE AND ELSEWHERE AS REQUIRED TO CONTROL FLOW DIRECTION.

20. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING SYSTEMS. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE. INSTALL PIPING FREE OF SAGS AND BENDS. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION

21. REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. BEVEL PLAIN ENDS OF STEEL PIPE. REMOVE SCALE, SLAG, DIRT, AND DEBRIS FROM INSIDE AND OUTSIDE OF PIPE AND FITTINGS BEFORE ASSEMBLY.

22. THREADED JOINTS: THREAD PIPE WITH TAPERED PIPE THREADS ACCORDING TO ASME B1.20.1. CUT THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED PIPE ENDS TO REMOVE BURRS AND RESTORE FULL ID. JOIN PIPE FITTINGS AND VALVES AS FOLLOWS: APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS UNLESS DRY SEAL THREADING IS SPECIFIED. DAMAGED THREADS; DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR DAMAGED. DO NOT USE PIPE SECTIONS THAT HAVE CRACKED OR OPEN WELDS.

23. INSTALL MANUAL AIR VENTS AT HIGH POINTS IN PIPING, AT HEAT-TRANSFER COILS, AND ELSEWHERE AS REQUIRED FOR SYSTEM AIR VENTING.

24. CUT INSULATION IN A MANNER TO AVOID COMPRESSING INSULATION MORE THAN 75 PERCENT OF ITS NOMINAL THICKNESS. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT. REPAIR DAMAGED INSULATION FACINGS BY APPLYING SAME FACING MATERIAL OVER DAMAGED AREAS. EXTEND PATCHES AT LEAST 4 INCHES BEYOND DAMAGED AREAS. ADHERE, STAPLE, AND SEAL PATCHES SIMILAR TO BUTT JOINTS.

25. INSULATE INSTRUMENT CONNECTIONS FOR THERMOMETERS, PRESSURE GAGES, PRESSURE TEMPERATURE TAPS, TEST CONNECTIONS, FLOW METERS, SENSORS, SWITCHES, AND TRANSMITTERS ON INSULATED PIPES, VESSELS, AND EQUIPMENT. SHAPE INSULATION AT THESE CONNECTIONS BY TAPERING IT TO AND AROUND THE CONNECTION WITH INSULATING CEMENT AND FINISH WITH FINISHING CEMENT, MASTIC, AND FLASHING SEALANT.

26. THE MECHANICAL CONTRACTOR SHALL TAKE THE LEAD IN PREPARATION OF COORDINATION DRAWINGS. SUCH DRAWINGS SHALL BE COMPLETED WITH COORDINATION FROM THE GENERAL CONTRACTOR AND ALL OTHER MAJOR AND MINOR SUBCONTRACTORS. PROVIDE PLAN VIEWS, SECTIONS AND ELEVATIONS, AS REQUIRED, TO FULLY COORDINATE ALL NEW WORK WITH ITSELF AND EXISTING CONDITIONS. DRAWINGS SHALL SHOW, BUT NOT BE LIMITED TO, ALL DUCTWORK, AIR DISTRIBUTION, MECHANICAL EQUIPMENT, MECHANICAL PIPING, FIRE PROTECTION PIPING, PLUMBING PIPING, CABLE TRAYS, LIGHTING FIXTURES, CEILING GRID AND HEIGHT, BEAMS AND JOISTS (WITH ELEVATIONS MARKED), ELECTRICAL CONDUIT LARGER THAN 2 INCHES IN DIAMETER AND ANY OTHER CEILING MOUNT DEVICES OR EQUIPMENT THAT PROTRUDE INTO THE CEILING CAVITY. IF THERE ARE ANY OUTSTANDING ISSUES THAT CANNOT BE RESOLVED, CONSULT WITH ARCHITECT AND/OR ENGINEER (THROUGH THE VA COTR) FOR GUIDANCE AND MAKE CORRECTIONS IN ACCORDANCE WITH DIRECTIONS GIVEN. IT IS IMPORTANT TO NOTE THAT FABRICATION CANNOT BEGIN UNTIL COORDINATION DRAWINGS HAVE BEEN APPROVED. ANY INSTALLATION COMMENCED PRIOR TO APPROVAL IS TAKEN AT THE CONTRACTORS OWN RISK AND MAY HAVE TO BE MODIFIED, MOVED AND/OR RECONFIGURED AT CONTRACTORS COST.

ALTERNATES

ALT #1

Add Alternate #1:
Construction and fit out of therapy pool, mechanical area (1-606), pool enclosure (1-603), associated roofing, specialty equipment housed within the pool area, doors 600B, 603, 604B, and sidelight 604 are all alternate.

Base bid to include demolition of mechanical unit, slab, and fence (DB); demolition of concrete ramp and canopy (D2, D7, D11); demolition of exterior door near column G4 and subsequent infill of exterior wall.

Plumbing sheets: PP101, PP111, PP112, PP113, PP301, PP302, and PP601 (all plumbing work related to therapy pool)

Mechanical sheets: MH111, MH401, MH503, MH504, MP101, MP111, and MH602 (all mechanical work related to therapy pool)

Electrical sheets: ED101, E-102, E-103, E-104, E-105, E-601, E603, and FA102 (all electrical work related to therapy pool)

ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	D	DAMPER - AUTOMATIC	HD	HOOD	MH	MANHOLE	SD	SUPPLY AIR DIFFUSER
AAHX	AIR TO AIR HEAT EXCHANGER	D-1	OUTDOOR AIR DAMPER	HOA	HAND/OFF/AUTOMATIC	MHP	MOTOR HORSEPOWER	SDPR	SMOKE DAMPER
AB	AIR BLENDER	D-2	RETURN AIR DAMPER	HP	HEAT PUMP	MIN	MINIMUM	SDR	SMOKE DAMPER (RETURN)
AAV	AUTOMATIC AIR VENT	D-3	RELIEF AIR DAMPER	HP	HORSEPOWER	MM	MILLIMETER	SDS	SMOKE DAMPER (SUPPLY)
ACC	AIR COOLED CONDENSER	DB	DECIBELS	HPDT	HIGH PRESSURE DRIP TRAP	MOV	MOTOR OPERATED VALVE	SEN	SENSIBLE HEAT
ACCH	AIR COOLED CHILLER	Db	DRY-BULB TEMPERATURE	HPR	HIGH PRESSURE RETURN (STEAM	MPR	MEDIUM PRESSURE RETURN (STEAM	SF	SUPPLY FAN
ACCU	AIR-COOLED CONDENSING UNIT	DDC	DIRECT DIGITAL CONTROLS		CONDENSATE)		CONDENSATE)	SG	SUPPLY AIR GRILLE
ACU	AIR CONDITIONING UNIT	DEG	DEGREE	HPS	HIGH PRESSURE SUPPLY (STEAM)	MPS	MEDIUM PRESSURE STEAM	SH	STEAM HUMIDIFIER
ACD	AUTOMATIC CONTROL	DF	DIFFUSER	HRC	HEAT RECOVERY COIL	MRI	MAGNETIC RESONANCE IMAGING	SHC	STEAM HEATING COIL
	DAMPER,MODULATING	DIA	DIAMETER	HRD	HEAT RECOVERY DEVICE	MTD	MEAN TEMPERATURE DIFFERENCE	SI	SQUARE INCHES
ACD-TP	AUTOMATIC CONTROL DAMPER,TWO	DIW	DEIONIZED WATER	HRP	HYDRONIC RADIANT (CEILING) PANEL	MVD	MANUAL VOLUME DAMPER	SP	STATIC PRESSURE
	POSITION	DP	DEW POINT TEMPERATURE	HRW	HEAT RECOVERY WHEEL	MZ	MULTI-ZONE	SP GR	SPECIFIC GRAVITY
AD	ACCESS DOOR	DP	DIFFUSER PLATE	HSTAT	HUMIDISTAT			SPD	SUPPLY PROCESS AND DISTRIBUTION
AF	AFTER FILTER	DPA	DIFFERENTIAL PRESSURE ASSEMBLY	HTM	HUMIDIFIER TERMINAL	NA	NOT APPLICABLE	SPRV	STEAM PRESSURE REDUCING VALVE
AFCV	AIR FLOW CONTROL VALVE	DPS	DIFFERENTIAL PRESSURE SENSOR	HUM	HUMIDIFIER UNIT MOUNTED	NC	NOISE CRITERIA	SPS	STATIC PRESSURE SENSOR
AFF	ABOVE FINISHED FLOOR	DX	DIRECT EXPANSION	HVU	HEATING AND VENTILATING UNIT	NC	NORMALLY CLOSED	SQ FT	SQUARE FOOT (FEET)
AFMD	AIR FLOW MEASURING DEVICE	DXCC	DIRECT EXPANSION COOLING COIL	HW	HOT WATER	NO	NORMALLY OPEN	SR	SUPPLY AIR REGISTER
AFW	AIR FOIL WHEEL (FAN)			HWC	HOT WATER COIL	NGFM	NATURAL GAS FLOWMETER	SS	STAINLESS STEEL
AHU	AIR-HANDLING UNIT	EA	EXHAUST AIR	HWHC	HOT WATER HEATING COIL	NO	NORMALLY OPEN	SSHX	STEAM TO STEAM HEAT EXCHANGER
AMP	AMPERGE	EAT	ENTERING AIR TEMPERATURE	HWP	HEATING HOT WATER PUMP	NOAA	NATIONAL OCEANIC & ATMOSPHERIC	SSR	SOLID SEPARATOR
AP	ACCESS PANEL	EC	EVAPORATIVE COOLER	HWR	HEATING HOT WATER RETURN		ADMINISTRATION	ST	STEAM TRAP
APD	AIR PRESSURE DROP	ECC	ENGINEERING CONTROL CENTER	HWS	HEATING HOT WATER SUPPLY	NOM	NOMINAL	SUH	STEAM UNIT HEATER
ARI	AIR CONDITIONING AND	ECU	EVAPORATIVE CONDENSER UNIT	HWUH	HOT WATER UNIT HEATER	NPLV	NON-STANDARD PART LOAD VALUE	SV	STEAM PRESSURE REDUCING VALVE
	REFRIGERATION INSTITUTE	EDH	ELECTRIC DUCT HEATER	HVD	HOISTWAY VENT DAMPER	NPSH	NET POSITIVE SUCTION HEAD	SVS	STEAM VENT SILENCER
AS	AIR SEPARATOR	EER	ENERGY EFFICIENCY RATIO	HX	HEAT EXCHANGER	NTS	NOT TO SCALE	SWHX	STEAM TO WATER HEAT EXCHANGER
ASME	AMERICAN SOCIETY OF MECHANICAL	EF	EXHAUST FAN	HZ	HERTZ				
	ENGINEERS	EG	EXHAUST GRILLE			OA	OUTSIDE AIR	T & PCV	TEMPERATURE AND PRESSURE
AW	AIR WASHER	EGS	EMERGENCY GAS SHUTOFF	I/O	INPUT/OUTPUT	OAG	OUTSIDE AIR GRILLE		CONTROL VALVE
AXF	AXIAL FLOW	EGT	ENTERING GLYCOL TEMPERATURE	IAQ	INDOOR AIR QUALITY	OAI	OUTSIDE AIR INTAKE	TAB	TESTING, ADJUSTING, BALANCE
		EH	EXHAUST HOOD	IBT	INVERTED BUCKET TRAP	OD	OUTSIDE DIAMETER	TD	TEMPERATURE DIFFERENCE
B	BOILER	EJ	EXPANSION JOINT	ICF	IN-LINE CENTRIFUGAL FAN	OFM	OIL FLOWMETER	TDH	TOTAL DYNAMIC HEAD
BD	BUTTERFLY DAMPER	EMD	END OF MAIN DRIP (STEAM)	ICU	INTENSIVE CARE UNIT	OR	OPERATING ROOM	TDS	TOTAL DISSOLVED SOLIDS
BDD	BACKDRAFT DAMPER	ENT	ENTERING	ID	INSIDE DIAMETER			TG	TRANSFER GRILLE
BDR	BASE BOARD RADIATOR	ER	EXHAUST REGISTER	IFB	INTEGRAL FACE AND BYPASS	P	PUMP	TP	TRAP
BFP	BACKFLOW PREVENTER	ERC	ELECTRIC REHEAT COIL	IN	INCHES	PA	PASCAL	TR	TOP REGISTER
BFT	BOILER PLANT FIRE TUBE	ERP	ELECTRIC REHEAT PANEL	IN HG	INCHES OF MERCURY	PC	PUMPED CONDENSATE	TSP	TOTAL STATIC PRESSURE
BG	BOTTOM GRILLE	ESP	EXTERNAL STATIC PRESSURE	IN WC	INCH WATER COLUMN	PCF	POUNDS PER CUBIC FOOT (FEET)	TSTAT	THERMOSTAT
BHP	BRAKE HORSEPOWER	ET	EXPANSION TANK	IN WG	INCH WATER GAUGE	PD	PRESSURE DROP	TU	TERMINAL UNIT
BHW	HOT WATER HEATING BOILER	ETO	ETHYLENE OXIDE	IN-LB	INCH-POUND	PEF	PROPELLER (TYPE) EXHAUST FAN	TWU	THRU-WALL UNIT
BHX	BOILER BLOWDOWN HEAT	EUH	ELECTRIC UNIT HEATER	IPLV	INTERGRATED PART LOAD VALUE	PF	PRE-FILTER		
	EXCHANGER	EWC	EVAPORATIVE WATER COOLER	IRH	INTRARED HEATER	PG	PRESSURE GAGE	UC	UNDER CUT
BIW	BACKWARD INCLINED WHEEL (FAN)	EWT	ENTERING WATER TEMPERATURE	IS	INSECT SCREEN	PGW	PROPYLENE GLYCOL-WATER	UC	UNIT COOLER
BMT	BONE MARROW TRANSPLANT	EX.	EXISTING	IU	INDUCTION UNIT		(SOLUTION)	UH	UNIT HEATER
BR	BOTTOM REGISTER			IV	INLET VANES	PHC	PREHEAT COIL	UL	UNDERWRITERS LABORATORY
BSC	BIOLOGICAL SAFETY CABINETS	F	FAHRENHEIT			PPM	PARTS PER MILLION	URV	UPBLAST UNIT VENTILATOR
BT	BLOWOFF TANK	F&T	FLOAT AND THERMOSTATIC	kg	KILOGRAM	PRS	PRESSURE REGULATING (VALVE)		
BTC	BLOWOFF TANK CONTROL VALVE	F/SDPR	COMBINATION FIRE SMOKE DAMPER	kg/HR	KILOGRAM PER HOUR		STATION	V	VALVE
BTU	BRITISH THERMAL UNIT	FA	FREE AREA	kPa	KILOPASCAL	PRV	PRESSURE REGULATING VALVE	VAF	VANE-AXIAL FAN
BTUH	BRITISH THERMAL UNIT PER HOUR	FC	FLEXIBLE CONNECTION	kW	KILOWATT	PSI	POUNDS PER SQUARE INCH	VAV	VARIABLE AIR VOLUME
BWT	BOILER PLANT WATER TUBE	FCU	FAN COIL UNIT (4 PIPE)	kWh	KILOWATT HOUR	PSIA	POUNDS PER SQUARE INCH –	VD	VOLUME DAMPER (MANUAL OPPOSED
		FCUC	FAN COIL UNIT COOLING ONLY				ABSOLUTE		BLADE)
C	CENTIGRADE (CELCIUS)	FCUH	FAN COIL UNIT HEATING ONLY	L	LITER	PSIG	POUNDS PER SQUARE INCH – GAGE	VFD	VARIABLE FREQUENCY DRIVE
CC	COOLING COIL	FCW	FORWARD CURVED WHEEL (FAN)	L/h	LITERS PER HOUR	PSS	PRIMARY SECONDARY SYSTEM	VHA	VETERANS HEALTH ADMINISTRATION
CCD	COOLING COIL CONDENSATE DRAIN	FD	FLOOR DRAIN	L/m	LITERS PER MINUTE	PSV	PRESSURE SAFETY VALVE	VI	VIBRATION ISOLATOR
CD	CEILING DIFFUSER	FD	FIRE DAMPER	L/s	LITERS PER SECOND	PTAC	PACKAGED TERMINAL AIR	VIV	VARIABLE INLET VANES
CENT	CENTRIFICAL	FF	FINAL FILTER	LAT	LEAVING AIR TEMPERATURE		CONDITIONER	VP	VACUUM PUMP
CFH	CUBIC FEET PER HOUR	FHX	FLUE GAS/FEEDWATER HEAT	LBS/HR	POUNDS PER HOUR			VPS	VARIABLE PRIMARY SYSTEM
CFM	CUBIC FEET PER MINUTE		EXCHANGER	LF	LINEAR FOOT (FEET)	R/E	RETURN OR EXHAUST	VR	VACUUM (STEAM CONDENSATE)
CFT	CUBIC FEET	FM	FLOW METER	LGT	LEAVING GLYCOL TEMPERATURE	RA	RETURN AIR		RETURN
CFP	CHEMICAL FEED PUMP	FOP	FUEL OIL PUMP	LH	LATENT HEAT	RAD	REFRIGERANT AIR DRYER	VSD	VARIABLE SPEED DRIVE
CG	CEILING GRILLE	FOT	FUEL OIL TANK	LPG	LIQUID PROPANE GAS	RAF	RADIO FREQUENCY	VUH	VERTICAL UNIT HEATER
CH	CHILLER	FOHX	FUEL OIL HEAT EXCHANGER	LPR	LOW PRESSURE RETURN (STEAM	RAHX	ROTARY AIR HEAT EXCHANGER		
CHP	CHILLED WATER PUMP	FPM	FEET PER MINUTE		CONDENSATE)	RAT	RETURN AIR TEMPERATURE	W	WATTS
CHW	CHILLER WATER	FPS	FEET PER SECOND	LPRC	LOW PRESSURE STEAM RETURN	RCCH	REMOTE CONDENSER CHILLER	WAG	WASTE ANETHESIA GAS
CHR	CHILLED WATER RETURN	FPTU	FAN POWERED TERMINAL UNIT		(CLEAN)	RCU	RECIPROCATING CHILLER UNIT	Wb	WET-BULB (TEMPERATURE)
CHS	CHILLED WATER SUPPLY	FR	FLOOR REGISTER	LLHX	LIQUID TO LIQUID HEAT EXCHANGER	RD	REFRIGERANT DISCHARGE	WC	WATER COOLED
CI	CAST IRON	FRP	FIBER REINFORCED POLYESTER	LPS	LOW PRESSURE STEAM	RDS	ROOM DATA SHEETS	WCCH	WATER COOLED CHILLER
CM	CARBON MONOXIDE	FS	FLOW SWITCH	LPSC	LOW PRESSURE STEAM (CLEAN)	REA	RELIEF AIR	WCCU	WATER COOLED CONDENSING UNIT
CM	CUBIC METER	FSTAT	FREEZESTAT	LSD	LINEAR SLOT DIFFUSER	RF	RETURN FAN	WCHP	WATER COOLED HEAT PUMPS
CM/S	CUBIC METER PER SECOND	FT	FEET	LTCP	LOCAL TEMPERATURE CONTROL	RG	RETURN GRILLE	WCPU	WATER COOLED PACKAGED UNIT
CO	CLEAN OUT	FT-LB	FOOT-POUND		PANEL	RH	RELATIVE HUMIDITY	WEF	WALL EXHAUST FAN
CO2	CARBON DIOXODE	FTR	FIN TUBE RADIATION	LVG	LEAVING	RHC	REHEAT COIL	WF	WATER FILTER
COMP	COMPRESSOR UNIT	FV	FACE VELOCITY	LVR	LOUVER	RHG	REFRIGERANT HOT GAS	WFCV	WATER FLOW CONTROL VALVE
COP	COEFFICIENT OF PERFORMANCE			LWT	LEAVING WATER TEMPERATURE	RL	REFRIGERANT LIQUID LINE	WFM	WATER FLOWMETER
CP	CONDENSATE PUMP	GA	GAUGE			RLA	RUN LOAD AMPERE	WFMD	WATER FLOW MEASURING DEVICE
CR	CEILING REGISTER	GAL	GALLONS	M	METER, SI UNIT	RO	REVERSE OSMOSIS	WG	WATER GAGE
CS	CONDENSATE STORAGE TANK	GH	GRAVITY HOOD	M/s	METERS PER SECOND (OR	RPM	REVOLUTIONS PER MINUTE	WPD	WATER SIDE PRESSURE DROP
CSG	CLEAN STEAM GENERATOR	GPD	GALLONS PER DAY		METERS/SECOND)	RR	RETURN REGISTER		
CT	COOLING TOWER	GPH	GALLONS PER HOUR	MA	MIXED AIR	RS	REFRIGERANT SUCTION	YR	YEAR
CU	CONDENSING UNIT	GPM	GALLONS PER MINUTE	MAT	MIXED AIR TEMPERATURE	RTU	ROOFTOP UNIT		
CUH	CABINET UNIT HEATER	GPR	GAS PRESSURE REGULATOR	MAU	MAKE-UP AIR UNIT	RV	RELIEF VALVE		
CV	CONSTANT VOLUME	GS	GALVANIZED STEEL	MAV	MANUAL AIR VENT	SA	SUPPLY AIR		
CW	COLD WATER (POTABLE)			MAX	MAXIMUM	SAD	SOUND ATTENUATING DEVICE		
CWCC	CHILLED WATER COOLING COIL	H	HUMIDIFER	MB	MIXING BOX	SAT	SUPPLY AIR TEMPERATURE		
CWP	CONDENSER WATER PUMP	H&CW	HOT & COLD WATER	MBH	1000 BTUH	SC	SHADING COEFFICIENT		
CWR	CONDENSER WATER RETURN (TO	HAC	HOUSEKEEPING AID CLOSET	MCA	MINIMUM BRANCH CIRCUIT AMPACITY	SCFM	STANDARD CUBIC FEET PER MINUTE		
	COOLING TOWER)	HB	HOSE BIBB	MER	MECHANICAL EQUIPMENT ROOM	SCI	SPINAL CODE INJURY		
CWS	CONDENSER WATER SUPPLY (FROM	HC	HEATING COIL	MERV	MINIMUM EFFICIENCY REPORTING	SCR	SILICON CONTROLLED RECTIFIER		
	COOLING TOWER)	HD	HEAD		VALUE	SD	SMOKE DETECTOR		

MECHANICAL LEGEND

- CARBON DIOXIDE
- THERMOSTAT
- SUPPLY DIFFUSER
- RETURN DIFFUSER/GRILL
- EXHAUST GRILL
- ROUND FLEX DUCT
- 1i / 200 CFM — DIFFUSER TAG / DIFFUSER CFM
- LINEAR SLOT DIFFUSER
- BALANCING DAMPER (RECTANGULAR)
- BALANCING DAMPER (ROUND)
- F — FIRE DAMPER
- SD — SMOKE DAMPER
- R — INCLINED RISE, IN DIRECTION OF AIRFLOW
- D — INCLINED DROP, IN DIRECTION OF AIRFLOW
- CONNECT NEW DUCT TO EXISTING
- LIMIT OF DEMOLITION

- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
- VANED ELBOW (SHORT RADIUS)
- STANDARD RADIUS ELBOW (LONG RADIUS)
- 10x8 — NEW DUCT (INSIDE DIMENSIONS: WIDTH X DEPTH)
- EXISTING DUCT TO REMAIN
- EXISTING DUCT TO BE REMOVED
- DUCT TRANSITION
- SIDE MOUNTED GRILLE
- 45° SUPPLY — STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)
- 45° RETURN
- UP / DN — SUPPLY DUCT (UP & DOWN)
- UP / DN — EXHAUST DUCT (UP & DOWN)
- UP / DN — RETURN DUCT (UP & DOWN)

- HPS — HIGH PRESSURE STEAM PIPING
- MPS — MEDIUM PRESSURE STEAM PIPING
- LPS — LOW PRESSURE STEAM PIPING
- COND — CONDENSATE RETURN PIPING
- ? — UNKNOWN EXISTING PIPING
- VAC — VACUUM PIPING
- CWS — CHILLED WATER SUPPLY PIPING
- CWR — CHILLED WATER RETURN PIPING
- HWS — HOT WATER SUPPLY PIPING
- HWR — HOT WATER RETURN PIPING
- FTHWS — FIN TUBE HEATING HOT WATER SUPPLY PIPING
- FTHWR — FIN TUBE HEATING HOT WATER RETURN PIPING
- PIPE UP
- PIPE DOWN
- BOTTOM CONNECTION
- TOP CONNECTION
- CAPPED OUTLET
- GLOBE VALVE
- GATE VALVE
- BALL VALVE
- PRESSURE RELIEF VALVE
- CHECK VALVE
- PRESSURE REGULATING VALVE
- WYE STRAINER VALVE
- BALANCING VALVE

- MOTORIZED CONTROL VALVE
- STEAM TRAP
- PRESSURE REDUCING VALVE

HVAC DESIGN DATA

DESIGN CONDITIONS	SUMMER TEMP	SUMMER WET BULB TEMP	SUMMER % HUMIDITY	WINTER TEMP	WINTER DEWPOINT TEMP	WINTER % HUMIDITY	LOWEST AVERAGE ANNUAL DEWPOINT
OUTDOOR DESIGN CONDITIONS	91 °F	75 °F	48	13 °F	-4 °F		-3 °F
OFFICE	75 °F	68 °F	60	70 °F	28 °F	20	
CORRIDORS	75 °F	68 °F	60	70 °F	28 °F	20	
CLEAN UTILITY / STORAGE ROOM				70 °F			
LOCKER ROOM (WITH TOILET)	75 °F	68 °F	60	70 °F	28 °F	20	
TOILETS - PUBLIC (INTERIOR)	75 °F	68 °F		70 °F	28 °F	20	
HOUSEKEEPING AID CLOSET				70 °F			
CONFERENCE ROOM	75 °F	68 °F	60	70 °F	28 °F	20	
EXAM ROOMS	75 °F	68 °F	60	70 °F	28 °F	20	
LOUNGE BREAK	75 °F	68 °F	60	70 °F			
THERAPY	75 °F	68 °F	60	70 °F	28 °F	20	
VESTIBULE				50 °F			

FULLY SPRINKLERED

ISSUED FOR BID

CONSULTANTS:

Project Manager	Architect	Structural Engineer	MEP/FP Engineer	Civil Engineer	Fire Protection Consultant	Cost Estimator	Aquatic Consultant	Associate Architects
BRAY MOONEY CONSULTING	ARRAY HEALTHCARE FACILITIES SOLUTIONS	WZG, STRUCTURAL CONSULTING ENGINEERS	APOGEE CONSULTING GROUP	GUIDON DESIGN	HARRINGTON GROUP	BRAY MOONEY CONSULTING	ATLANTIC AQUATIC ENGINEERING	W. COOK ARCHITECTS
410 E. 21 STREET CHESTER, PA. 19013 Tel (610) 872-3716	2520 RENAISSANCE BLVD., SUITE 110 KING OF PRUSSIA, PA. 19406 Tel (610) 270-0599	P.O. BOX 24 40 LITTLE ROAD ZIEGLERVILLE, PA. 19492 Tel (610) 287-3194	7330 CHAPEL HILL ROAD, SUITE 202 RALEIGH, NC. 27606 Tel (919) 858-7420	2453 N.DELAWARE STREET INDIANAPOLIS, IN 46205 Tel (317) 800-6388	7508 E. INDEPENDENCE BLVD., SUITE 116 CHARLOTTE, NC. 28277 Tel (704) 531-9077	410 E. 21 STREET CHESTER, PA. 19013 Tel (610) 872-3716	1823 DEEP RUN ROAD PIPERSVILLE, PA. 18947 Tel (215) 766-0409	1251 ROMANSVILLE ROAD COATESVILLE, PA. 19320 Tel (610) 383-4460

PROJECT MANAGER: Bray Mooney Consulting

Project Number	Scale
3627	As indicated

Drawing Title: MECHANICAL NOTES, ABBREVIATIONS, AND LEGENDS

Approved: Project Director

Project Title: RENOVATE BUILDING 69

Location: 1400 Black Horse Hill, Coatesville, PA

Date	Checked	Drawn
1/22/2014	DJR	ORD

VA Project Number: 542-CSI-203

Building Number: 69

Drawing Number: M-001

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Office of Facilities Management

Department of Veterans Affairs

Revisions	Date

VA FORM 08-6231, OCT 1978